

Improve pulp and paper product quality with Level+

Accurate and repeatable level measurements to provide you with unparalleled insight into your pulp and paper process.

The Challenge

To efficiently produce pulp of a consistent quality, continuous digesters depend on the reliable feed of pre-steamed wood chips of a uniform size.

Wood chips are fed to a chip bin via a variable speed conveyor belt. They enter the bin through a flop gate, where a level of 75% is set to optimise pre-steaming. This step removes air and non-condensable gases, and loosens the fibre structure in the chips. Adequate pre-steaming is critical to the efficiency of the digester because it affects the penetration of white liquor into the wood fibres. Poor performance in this area means longer cook times in the digester (which means less throughput) as well as higher steam and white liquor use. Unfortunately, chip bin level measurement is a long-standing problem at any mill.

The unique characteristics of wood chips, combined with a vapour space of sawdust and steam, and mixed with resin vapours makes this a tough application to measure. It is very difficult to consistently maintain the critical 75% level which often results in the plugging of the Diamond Back chip bin. This plugging is caused by excessive soaking of the chips during level excursions below 75%. The excess soaking causes the chips to swell and block the bin's cone-shaped bottom.



The Solution

The Tracerco™ Level+ nuclear level gauge, can accurately measure the level of the wood chips. Due to its modular design, it can ignore the increased density in vapour space caused by sawdust, steam and resin vapours to provide consistent and highly accurate point and bulk level measurements. Level+ can also be set to ignore or compensate for higher levels in the measurement range, chips falling in front of the beam or a coating on the wall.

Typically, the measurement of wood chips is done by using a scintillation or an ion chamber detector. A scintillation detector can be effected by the temperature and an ion chamber needs a lot more radiation to function accurately. Level+ uses modular Geiger Müller technology, which means it's less susceptible to temperature fluctuations - again ensuring sustained accuracy and reliability in its measurements. Advanced signal processing and control system optimisation also reduces operator intervention time, providing a proactive and cost-effective approach to the planning of any maintenance on equipment.

Benefits:

- Reduced unplanned shutdowns
- Improved product quality
- Consistent, highly accurate and repeatable level measurements
- Process optimisation
- Increased throughput due to faster cooking times
- Redundancy of measurement
- Non-invasive and retrofit
- Maintenance free

Our innovative work gives customers the insights they need to help solve their problems. To learn more, read our case studies at [tracerco.com/downloads/case-studies](https://www.tracerco.com/downloads/case-studies)

